

DTC 2278EB

Local-Bus to IDE and Super I/O Controller With EDPT BIOS

Part Number 400529-89A

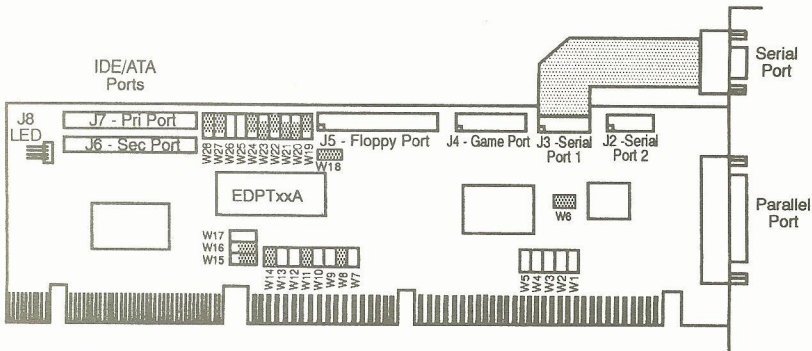


Figure 1 Diagram of the DTC 2278EB Host Adapter

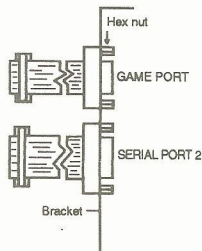


Figure 2 Diagram of Serial Port 2 and Game Port Bracket



DTC DATA TECHNOLOGY
C O R P O R A T I O N

Features

- VESA Local Bus (VL-Bus) operation to 50MHz
- 32-bit host interface
- DTC 2278EB Supports Four (4) IDE/ATA devices:
 - EIDE or FAST ATA Hard Disk Drives
 - IDE Tape drives
 - IDE CD-ROM drives (ATAPI Compatible)
- Enhanced Drive Parameter Table (EDPT) BIOS
 - Supports Drives with capacities greater than 528 MBytes
- Enhanced IDE Device Drivers
 - Auto Configuring
 - Support for EIDE and FAST ATA-2 Drives
 - Support for Mode 3 and Mode 4 IDE Drives (up to 16.6 MByte/sec.)
 - LBA (Logical Block Address) support
 - Multi Sector Transfer
 - Supports Secondary Port
- Enhanced IDE/ATA device driver for the following O/Ss:
 - DOS
 - Windows 3.10 and Windows for WorkGroups 3.11
 - Review the "README.1ST" file on the driver diskette for additional OS support. (OS/2, Win NT, and Novell)
- Support for two 3¹/₂" 720K/1.44M or 5¹/₄" 360K/1.2M floppy disk drives
- Two Enhanced Serial ports (NS16550 compatible)
- One Enhanced Parallel Port (PP, SPP, EPP, & ECP)
- One Game port

Defaults

The factory default settings are suitable for most computer applications and typically do not need to be changed.

Serial Port 1:	COM 1	3F8H	IRQ 4
Serial Port 2:	COM 2	2F8H	IRQ 3
Parallel Port:	LPT 1	378H	IRQ 7
Floppy Port:	Enabled		
Game Port:	Enabled		
BIOS	Enabled	C800:0	

Configuration & Hardware Jumpers

Enhanced IDE BIOS (W18, W28 & W27)

The DTC 2278EB with EDPT support allows your system to access Hard Disk Drives with capacities greater than 528 MBytes. These large capacity drives **MUST support** Logical Block Addressing (LBA).

WARNING: Large capacity drive(s) previously Partitioned and Formatted, will need to Re-Partitioned and Formatted after installing the DTC 2278EB and selecting an EDPT Drive Type (1,2). Before doing this you must backup all data you wish to retain.

W18	W28	W27	EDPT BIOS Address	W27/W28 Pin Order
on	1-2	1-2	DC000 - DFFFF	 3
on	2-3	1-2	D8000 - DBFFF	2
on	1-2	2-3	CC000 - CFFFF	1
on	2-3	2-3	C8000 - CBFFF *	
off	x	x	Disabled	

To access the full capacity of a drive > 528MB on the **Secondary Port**: The drive must support Logical Block Addressing (LBA), and the DTC Enhanced IDE Drivers must be loaded.

Parallel Port I/O (W16 & W15)

W16	W15	Function
2-3	2-3	Uni-Directional (Printer Mode)
2-3	1-2	ECP & EPP Modes
1-2	2-3	EPP & Bi-Directional Modes
1-2	1-2	Invalid

ECP DMA Channel Selection (W5 - W2)

When using the ECP Mode, you must select a DMA channel.

W5	W4	W3	W2	Function
off	on	off	on	ECP uses DMA Channel 1
on	off	on	off	ECP uses DMA Channel 3

IO Port Address (W24 - W19)

These jumpers select the address of the IO ports as follows:

Serial Port 1

W24 W23



COM 1
(3F8H)
Default

Serial Port 2

W22 W21



COM 2
(2F8H)
Default

Parallel Port

W20 & W19



LPT 1
(378H)
Default

W24 W23



COM 3
(3E8H)

W22 W21



COM 4
(2E8H)

W20 & W19



LPT 2
(278H)

W20 & W19



LPT 3
(3BCH)

W24 W23



Disabled

W22 W21



Disabled

W20 & W19



Disabled

I/O Port Interrupt Select (W14 - W7)

Serial Port 1

W14 W13 W12



IRQ 4
Default

Serial Port 2

W11 W10 W9



IRQ 3
Default

Parallel Port

W8 W7



IRQ 7
Default

W14 W13 W12



IRQ 3

W11 W10 W9



IRQ 4

W8 W7



IRQ 5

W14 W13 W12



IRQ 5

W11 W10 W9



IRQ 5

Game Port Enable (W6)

Enable (Default)



Disable

Installation

NOTES:

When connecting a ribbon cable connector, always align the colored (blue or red) side of the cable to Pin 1.

1. Power down the computer.
2. Set the jumpers on the DTC 2278EB.
3. Install the DTC 2278EB in an available 32-bit VL-BUS slot.
4. Install the Serial Port 2 and Game Port bracket in an available blank bracket location.
 - Connect the Serial Port 2 connector ribbon cable to J2.
 - Connect the Game Port connector ribbon cable to J4.
5. Connect the 34-pin floppy drive cable to J5. Connect the other end of the cable to the floppy drive(s). The twisted end of the cable is for drive A: and the middle connector is for drive B:. If drive B: is installed, remove the terminating resistors from it.
6. Connect the Primary Port drive(s). Attach one end of a 40-pin IDE ribbon cable connector to J7. Connect the other end of the cable to the IDE/ATA drive(s).
7. Connect any Secondary Port drive(s). Attach one end of a 40-pin IDE ribbon cable connector to J6. Connect the other end of the cable to the IDE/ATA drive(s).
8. Attach the hard drive activity LED connector to J8.
9. Close the computer cover and Turn system on.
10. **Enter the CMOS Setup program.**
 - For Drive C: with drive > 528MB, set drive type to TYPE 1.
With Drive < 528MB, set drive type to User Defined.
 - For Drive D: with drive > 528MB, set drive type to TYPE 2.
With Drive < 528MB, set drive type to User Defined.
 - **Disable System BIOS CACHE option for the EDPT BIOS Address.**
 - Save CMOS settings.

Installing Software Drivers

The DTC 2278EB Primary Port will operate without the use of Device Drivers in all Operating Systems. (ISA 16 Bit PIO)

DTC Enhanced IDE drivers need to be loaded to support the Secondary Port, turn on 32-bit mode, enable multi-sector transfers, and program the DTC 2278EB and each IDE device for optimal performance.

NOTES:

There are several software utility programs available which provide the capability to obtain the maximum capacity from drives > 528 MBytes. They are not required when using a DTC 2278EB, and should not be used.

EZIDE Installation Utility

The **EZIDE** Installation Utility will automatically install the DOS and Windows drivers. To use **EZIDE**, insert the DTC Enhanced IDE Driver diskette into the **A:** drive and type:

A:EZIDE

For detailed information on Installation, troubleshooting, and other Operating Systems, refer to the "README.1ST" file on the driver diskette received with this product.

DOS

- Insert MS-DOS boot disk in drive A: and reboot system.
- Partition the IDE drive with DOS FDISK and then perform DOS FORMAT. Install DOS on the hard drive.
- Copy the **DOSEIDE.SYS** file to boot directory. "**C:**"
- Add the following line to the **CONFIG.SYS** file:
device=DOSEIDE.SYS
- To Enable the Secondary port:, (IRQ15 and I/O 170H - 177H). Add a **"/2"** software switch to the **"DOSEIDE.SYS"** line in the **CONFIG.SYS** file.
device=doseide.sys /2
- Re-boot the system.

Windows 3.1

Read the "README.1ST" file on the driver diskette for instructions on the installation of the DTC Enhanced IDE Windows VxD driver. The "DOSEIDE.SYS" driver must be installed to be able to access drives installed on the secondary port, when in Windows.

Troubleshooting

This section lists some of the problems the user might encounter following installation and configuration of the DTC 2278EB. The "README.1ST" file on the driver diskette contains additional troubleshooting suggestions.

The most current set of drivers for this product are available from the DTC BBS. (See Technical Support section for details)

PROBLEM: DTC 2278EB Hangs or Fails when you access the Hard Disk.

SOLUTION: The drive may have limitations in its operational capability. Use the following steps to put the drive in a standard operation mode.

Step 1: Determine if Drive Transfer rate is the problem by setting drive to standard PIO Mode 0. Add this switch after the "device=doseide.sys" statement in the CONFIG.SYS file: **/dx:p0** (set **x** = Drive #, i.e. 0/1)

Step 2: Determine if Multi-Sector is the problem by disabling Multi-Sector transfer. Add this switch after the "device=doseide.sys" statement in the CONFIG.SYS file: **/dx:m0** (set **x** = Drive #, i.e. 0/1)

PROBLEM: DTC 2278EB will not run WFWG 3.11 or Windows 3.1 in Enhanced Mode.

SOLUTION: The DTC 2278EB does support WFWG 3.11 and Windows 3.1 in Enhanced mode. Check the following:

1. Make sure you have installed the DTC Windows Driver **WINEIDE.386** in the **SYSTEM.INI** file correctly. See DTC Windows driver installation instructions included in the "README.1ST" file on the driver diskette.

PROBLEM: Can not access drives on the secondary port in WFWG 3.11 or Windows 3.1 in Enhanced Mode.

SOLUTION: Make sure you have installed the DTC DOS Driver **DOSEIDE.SYS** with the **/2** switch in the **CONFIG.SYS** file correctly.

PROBLEM: Performance is not up to expectation. Data transfer rates appear slow.

SOLUTION: Verify that the DOS device driver, **DOSEIDE.SYS**, and the Windows driver, **WINEIDE.386** are installed. Use an IDE hard drive that supports multi-sector transfers and has a fast data transfer rate as reported by the drive manufacturer. New drives that support the ATA-2 Specification show the best results. Verify the performance by using the DTC benchmark utility "DTCSPD.EXE" found on the driver diskette.

Technical Support Services

Automated FAX (408) 942-4005 (24 hours)

For Installation Guides and Application Notes

Bulletin Board System (BBS) (408) 942-4010 (24 hours)

The **BBS** setup requires the following modem settings:

Baud Rate: 1200 - 14400 bps **Data Bits:** 8 **Stop Bit:** 1 **Parity:** None

After you have registered and created your own password, you will be brought to the Main Board Menu. To join a conference from the Main Board, use the "J" command. Once you have joined the appropriate conference, type "F" for a list of the Files Directories. The Files Directories are divided into three (3) subdirectories: "1" is Install Guides and Application Notes, "2" is Drivers, and "3" is for Uploads.

Technical Support (408) 262-7700 (8am-5PM PST)

Technical Support FAX (408) 942-4027 (24 hours)

Limited Hardware Warranty

DTC Data Technology Corporation warrants the DTC 2278EB against defects in materials and workmanship for a period of one (1) year from the date of original retail purchase. DTC Data Technology Corporation will, at its option, repair, replace, or refund the purchase price of the defective product if returned, with a copy of the bill of sale, shipping prepaid, during the warranty period. DTC Data Technology Corporation will not be liable for special, incidental, or consequential damages arising out of the use of this product and in no event shall the liability of DTC Data Technology exceed the actual amount paid by purchaser for this product.

FCC Compliance

This device complies with the Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. However, there is no guarantee that interference will not occur in a particular installation. DTC Data Technology is not responsible for any television, radio, or other interference caused by unauthorized modification of this product.

Modifications to this equipment that are unauthorized by the manufacturer may void the user's right to operate this device according to FCC rules.

FCC # J8Y2278VL